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Publication number: **0 504 938 A3**

**EUROPEAN PATENT APPLICATION**

Application number: **92104920.1**

Int. Cl. 5: **A61K 37/02, C07K 5/08**

Date of filing: **20.03.92**

Priority: **22.03.91 JP 59182/91**  
**22.03.91 JP 59185/91**

Date of publication of application:  
**23.09.92 Bulletin 92/39**

Designated Contracting States:  
**AT BE CH DE DK ES FR GB GR IT LI LU MC**  
**NL PT SE**

Date of deferred publication of the search report:  
**14.04.93 Bulletin 93/15**

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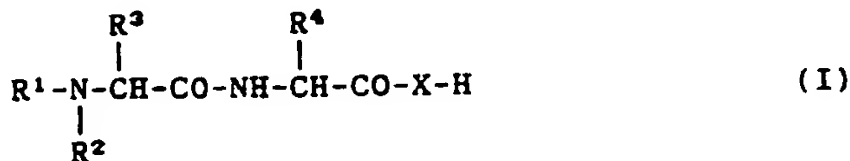
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**Prophylactic and therapeutic agent for bone diseases comprising di- or tripeptide derivative as active ingredient.**

**Use of a compound represented by the following general formula (I):**



wherein R<sup>1</sup> represents a straight or branched acyl group having 2 to 10 carbon atoms, a branched cyclic or bridged cyclic alkyloxycarbonyl group having 4 to 15 carbon atoms, a substituted or unsubstituted benzyloxycarbonyl group, a 2,2,2-trichloroethyloxycarbonyl group, a 2-(trimethylsilyl)-ethyloxycarbonyl group, a p-toluenesulfonyl group, an o-nitrophenylsulfonyl group, a diphenylphosphonothioyl group, a triphenylmethyl group, a 2-benzoyl-1-methylvinyl group or a 4-phenylbutanoyl group;

R<sup>2</sup> represents a hydrogen atom or forms a phthaloyl group together with R<sup>1</sup>;

R<sup>3</sup> represents an isobutyl group, an n-butyl group or an isopropyl group;

R<sup>4</sup> represents an n-butyl group or an isobutyl group;

X represents a direct bond, a methionine residue, a leucine residue or a norleucine residue; and

H at the C-terminal means that the carboxyl group is reduced in the form of the aldehyde;

as an active ingredient for the preparation of a pharmaceutical composition useful in preventing or treating malignant hypercalcemia, bone Paget's disease or osteoporosis.

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## EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.5)
Y	JOURNAL OF ENZYME INHIBITORS vol. 3, no. 3, 1990, HARWOOD, ENGLAND pages 195 - 201 SASAKI ET AL 'Inhibitory effect of di- and tripeptidyl aldehydes on calpains and cathepsins' * See the whole document * ---	1-4	A61K37/02 C07K5/08
Y	EP-A-0 393 457 (SUNTORY LIMITED) 24 October 1990 * See pages 2-3 * ---	1-4	
Y	EP-A-0 269 311 (MERCK & CO. INC.) 1 June 1988 * See page 2, Background * ---	1-4	
Y	BONE vol. 8, 1987, pages 305 - 313 DELAISSE ET AL 'The effects of inhibitors of cysteine-proteinases and collagenase on the resorptive activity of isolated osteoclasts' * See page 305, Introduction * ---	1-4	
A	PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE vol. 183, no. 2, 1986, DULUTH, USA pages 262 - 267 DIPASQUALE 'Proteoglycan- and collagen-degrading enzymes from human interleukin 1-stimulated chondrocytes from several species: Proteoglycanase and collagenase inhibitors as potentially new disease-modifying antiarthritic agents (42416)' * See pages 262 and 265 * --- -/--	1-4	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 FEBRUARY 1993	Examiner KORSNER S.E.
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- A : member of the same patent family, corresponding document	



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A	JOURNAL OF BIOCHEMISTRY vol. 106, 1989, TOKYO, JAPAN pages 1035 - 1040 SAITO ET AL 'The neurite-initiating effect of a tripeptide aldehyde protease inhibitor on PC12h cells' * See page 1035, Abstract *	1-4	
A	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA vol. 87, 1990, WASHINGTON pages 83 - 87 THIELE ET AL 'Mechanism of L-leucyl-L-leucine methyl ester-mediated killing of cytotoxic lymphocytes: Dependence on a lysosomal thiol protease, dipeptidyl peptidase I, that is enriched in these cells' * See page 83, Abstract *	1-4	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
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